OBJECTIVES: Pneumonia-related 30-day readmission rates are publically reported as part of the Hospital Readmissions Reduction Program to improve quality of care for Medicare beneficiaries. We estimated the impact of pneumonia on inpatient mortality and 30-day readmission rates in mechanically ventilated (MV) patients. **METHODS:** We performed a cohort study of MV patients using the Premier Inpatient database (July 2012 to June 2013). Patients on MV for >=1 day were included and classified based on those with a pneumonia-related diagnosis code and those without. Patients were followed for the entire period of their hospitalization. Inpatient mortality and rates of readmission for the thirty days post discharge were compared between the two groups using generalized linear models (GLMs). We estimated both outcomes using the binomial distribution, controlling for patient demographics, 3M™ All Patient Refined Diagnosis Related Group Severity and Mortality indices, and hospital characteristics. **RESULTS:** A total of 65,246 patients met criteria, of which 15,421 (23.6%) carried a pneumonia diagnosis. Pneumonia patients were older (64.2 vs 58.0 years, p<0.0001), more likely to be male (46.8% vs 45.3%, p=0.0012), white (72.4% vs 66.9%, p<0.0001), and on public insurance (75.6% vs 65.2%, p<0.0001). Comparing outcomes, pneumonia patients experienced significantly higher rates of mortality (25.5% vs. 18.1%, p<0.0001) and 30-day readmission (15.3% vs. 12.9%, p<0.0001). After adjustment for patient and institutional factors in the GLM regressions the risk of both outcomes remained statistically significant with odds ratios of 1.05 (95% CI: 1.01 to 1.10) for mortality and 1.11 (95% CI: 1.05 to 1.17) for 30-day readmission (p=0.024 and 0.0002, respectively). **CONCLUSIONS:** Pneumonia in MV patients increases the risk of mortality and 30-day readmissions. With penalties as high as 3% across all Medicare payments for readmission, efforts should continue to carefully evaluate the care of mechanically ventilated patients with pneumonia.

PRS4

MULTIMORBIDITY AND COPD MEDICATION RECEIPT AMONG MEDICAID BENEFICIARIES WITH NEWLY-DIAGNOSED COPD

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OBJECTIVES: Multimorbidity is highly prevalent among individuals with Chronic Obstructive Pulmonary Disease (COPD). The association between multimorbidity and COPD medication management is not well researched. This study sought to examine the association between multimorbidity and receipt of COPD medications among Medicaid beneficiaries with newly diagnosed COPD. **METHODS:** Retrospective longitudinal dynamic cohort design was used and data were extracted from multiple years (2005-2008) of Medicaid Analytic eXtract (MAX) files. Medicaid beneficiaries with newly diagnosed COPD (N = 19,060) were identified using International Classification of Diseases Codes (ICD-9-CM) codes for COPD. ICD-9-CM codes for commonly co-occurring conditions with COPD were used to create multimorbidity variable. These conditions included arthritis, cardiovascular diseases (CVD), depression, diabetes, hypertension, hyperlipidemia and osteoporosis. Medicaid beneficiaries with newly diagnosed COPD were categorized into following multimorbidity categories: 1) physical multimorbidity only; 2) mental multimorbidity only; 3) both physical and mental multimorbidity and 4) no multimorbidity. Receipt of COPD medications (short-acting, long-acting bronchodilators and inhaled corticosteroids) was identified using National Drug Codes. Bivariate relationships between multimorbidity and COPD medication receipt were tested using chi-square test of independence. The associations between multimorbidity and COPD medication receipt were analyzed with logistic and multinomial logistic regressions. **RESULTS:** Among Medicaid beneficiaries with newly diagnosed COPD, 74.9% had at least one co-occurring chronic condition. After controlling for patient characteristics, adults with multimorbidity were less likely to receive COPD medications compared to those without any multimorbidity. For example those with physical multimorbidity were less likely to receive short-acting bronchodilators (AOR: 0.82; 95% CI: 0.75, 0.89), long-acting bronchodilators (AOR: 0.86; 95% CI: 0.79, 0.93) and inhaled corticosteroids (AOR: 0.81; 95% CI: 0.75, 0.88) compared to those with no inflammation-related multimorbidity. **CONCLUSIONS:** Prevalence of multimorbidity is very high among Medicaid beneficiaries with newly diagnosed COPD. Our study findings suggest poor COPD medication management among those with multimorbidity.

PRS5

DRUG THERAPY FOR TREATMENT OF IDIOPATHIC PULMONARY FIBROSIS: A SYSTEMATIC REVIEW AND NETWORK META-ANALYSIS

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OBJECTIVES: Idiopathic pulmonary fibrosis (IPF) is a rare, progressive form of fibrosing interstitial pneumonia which results in loss of lung function and premature mortality. The FDA first approved treatments for IPF in late 2014. The aim of this systematic review and network meta-analysis (NMA) is to perform a mixed treatment comparison of the efficacy of available pharmacologic treatments for IPF. **METHODS:** Medline, EMBASE, CENTRAL, and PROSPERO were searched for randomized clinical trials in patients with IPF and supplemented with hand searches. Only randomized trials consisting exclusively of IPF patients were included. All studies were independently abstracted by two analysts. The primary outcome of interest was the standardized mean difference between treatment and control of change in percent predicted forced vital capacity (FVC) from baseline to one year. **RESULTS:** Literature review identified 1,191 records of which 36 met our inclusion criteria. Fixed effects pairwise comparisons of the standardized mean difference (SMD) of intervention versus placebo suggested better performance of nintendanib relative to other treatments with a 4.9% (95%CI: 3.8-6.0) standardized improvement relative to placebo in %FVC . This falls comfortably within the range of minimal clinically important difference for this endpoint as measured by other authors. The data structure for pirfenidone did not allow for comparison of %FVC. Sildenafil, N-acetylcysteine (NAC), and azathioprine did not show statistically significant improvement relative to placebo. **CONCLUSIONS:** Nintenadib offers a new treatment option for a disease where few options existed. Based on studies reviewed, sildenafil and NAC treatments did not slow disease progression as measured by change in percent FVC and their use in IPF should be limited.

PRS6

IMPACT OF CHANGE IN LUNG FUNCTION AND COPD-RELATED PATIENT OUTCOMES ON EXACERBATIONS AND HOSPITALIZATIONS: A SYSTEMATIC LITERATURE REVIEW

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OBJECTIVES: Clinical trials of chronic obstructive pulmonary disease (COPD), a progressive disease with a substantial economic burden, primarily assess exacerbation rates based on health resource utilization (HRU), leading payers to focus on this endpoint as a cost driver. The drug approval process often requires documentation of clinically relevant improvements in measures such as forced expiratory volume in one second (FEV1); however, their link to longer-term outcomes, such as exacerbations and HRU are not known. We conducted a systematic review of the published literature to evaluate the linkage. **METHODS:** We searched MEDLINE- and Embase-indexed English-language publications from 2002 through October 1, 2014 for randomized controlled trials with ≥20 adult patients with COPD. Included trials described changes in FEV1or St. George's Respiratory Questionnaire (SGRQ), as well as exacerbations or HRU. **RESULTS:** We identified 13 trials among 1,196 publications reporting changes in SGRQ or FEV1 and rate of exacerbation and hospitalization. We combined FEV1 pre-bronchodilator values with FEV1trough values given the similarity of these variables. Based on the MCID value for SGRQ of 4 units, exacerbations ranged from 0.414 to 5.61/person-year among those not reaching SGRQ MCID, compared with a range of 0.42-1.07/person-year among those reaching SGRQ MCID. Using a minimal clinically important difference (MCID) value for FEV1 of 100mL, the exacerbation rate ranged from 0.414 to 5.61/person-year among those not reaching FEV1 MCID, compared to 0.69 to 1.02/person-year among those reaching FEV1MCID. The annual hospitalization rate due to exacerbations ranged from 0.02-0.7/person-year among those not reaching SGRQ MCID, and from 0.03-0.16/person-year among those reaching SGRQ MCID. Annual hospitalization rates due to exacerbations ranged from 0.02-0.7/person-year among those not reaching FEV1 MCID, compared to 0.05-0.16/person-year among those reaching FEV1MCID. **CONCLUSIONS:** Preliminary results suggest a relationship between clinically meaningful improvements in bronchodilation and patient-reported outcomes and annualized exacerbations and hospitalizations.

PRS7

THE USE OF HELIOX IN HOSPITALIZED CHILDREN FROM CARTAGENA COLOMBIA

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OBJECTIVES: To describe the use of heliox therapy in a case series of patients admitted to emergency department or/and intensive care unit of children hospital "Napoleon Franco Pareja" in Cartagena, Colombia. **METHODS:** We described the clinical features and results of heliox therapy in a series of patients admitted in emergency room and/or intensive care unit. For qualitative variables proportions were used and for numeric variables were analyzed with averages and measures of dispersion. We compared the differences in categorical variables using the chi-square or Fisher exact test. The aplicative Epidat 3.1 was used for data analysis **RESULTS:** Fifty two patients were included, of whom 59.6% were male. The mean age was 21.2 months (SD: 25.6). The two most frequent diagnoses were status asthmaticus (32.7%) and acute bronchiolitis (26.9%). Mortality was 5.8%. Success of heliox therapy was 76.9%. The route of administration was not related to the type of response. The duration of heliox therapy averaged 5.9 hours (SD 4.1) in patients who did not respond favorably and 8.0 hours (SD 5.6) in those who responded to heliox. Fifty percent off patients did not need endotracheal intubation and all responded favorably to heliox therapy. **CONCLUSIONS:** A high success rate with heliox therapy was found in this case series. Its use is recommended as an adjunct therapy in the management of acute respiratory insufficiency.

PRS8

REAL-WORLD OBSERVATIONAL STUDY OF ASSOCIATION BETWEEN STATIN MEDICATIONS AND COPD-SPECIFIC OUTCOMES

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OBJECTIVES: Disease modifying drugs are not yet available for the management of individuals with Chronic Obstructive Pulmonary Disease (COPD). Statin therapy, due to its anti-inflammatory properties is under consideration for the management of COPD. This study examined the relationship between statin therapy and COPD-specific outcomes. **METHODS:** Retrospective longitudinal dynamic cohort design using Medicaid claims data from multiple years (2005-2008) was utilized. Statin therapy was identified from the prescription drug file using the National Drug Codes (NDC). COPD-specific outcomes such as hospitalizations, emergency room and outpatient visits were identified based on a primary diagnosis of COPD. Multivariable logistic regressions with Inverse Probability Treatment Weights (IPTW) were used to examine the relationship between statin therapy and COPD-specific outcomes. The relationship between multimorbidity, statin medications and COPD-specific outcomes was tested using an interaction term. Secondary analyses with

duration of stain therapy were also conducted. All analyses will be conducted using SAS version 9.3. **RESULTS:** The study included 19,060 Medicaid beneficiaries with newly-diagnosed COPD, out of whom 30.3% beneficiaries received statins during the 1-year baseline period. Compared to adults without statin therapy, those with statin therapy had significantly lower rates of COPD-specific hospitalizations (4.7% vs. 5.2%; p<0.05), emergency room visits (13.4% vs. 15.4%; p<0.001) and outpatient visits (41.4% vs. 44.7%; p<0.001). Even after adjusting for observed selection bias with IPTW technique, adults with statin therapy were less likely to have COPD-specific hospitalizations (AOR: 0.76; 95% CI: 0.66, 0.87), emergency room visits (AOR: 0.81; 95% CI: 0.75, 0.89) and outpatient visits (AOR: 0.86; 95% CI: 0.80, 0.91) compared to those without statin therapy. Adults with multimorbidity and statin therapy were less likely to have COPD-specific outcomes. **CONCLUSIONS:** Statin therapy was associated with reduction in COPD-specific outcomes. These findings may suggest beneficial effects of statin among newly diagnosed COPD patients and warrant further clinical trial investigation.

PRS9

SELF-MEDICATION AND ASSOCIATED HEALTH CARE COSTS- A SURVEY IN THE URBAN AND RURAL POPULATION OF A MAJOR CITY IN PAKISTAN

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OBJECTIVES: Self-medication in both rural and urban population in Pakistan is an increasingly growing concern. Both literate and illiterate people irrespective of age and gender practice self-medication, which is in more than 50% of cases inappropriate. The aim of this study was to survey over-the-counter availability of medicines and self- medication pattern among the rural and urban population of Karachi, Pakistan. **METHODS:** Over 1300 volunteers of ages (between 20-80 years) and both genders were surveyed for their self-medication pattern. Medicines were grouped as antimicrobials and non-antimicrobials. **RESULTS:** 93% of volunteers confirmed the practice of self-medications and the frequency was higher in females (57%) as compared to males (43%), and the pattern was same in both urban and rural environment. The general symptoms for which medicines were taken included head ache (80%), body pain (67%), fever (40%), disturbed bowel (83%) and flu/cough/cold (72%). Among the non-antimicrobial medicines, the most frequently used groups were aspirin, paracetamol, chlorpheniramine, pseudoephedrine, ibuprofen and metronidazole. 13 % of the individuals confirmed adverse effects of the medicines. Among the antimicrobial drugs, only antibiotics were taken, and almost all classes and generations of antibiotics were taken. Oral formulations of penicillins, quinolones, and cephalosporins were frequently used as compared to other classes of antibiotics. However, not a single example of intravenous and intramuscular antibiotics was observed. 43% of the individuals confirmed that antibiotics were ineffective in their condition. **CONCLUSIONS:** The unregulated over-the-counter availability of medicines and the practice of self-medication are increasingly growing threats to the health care system in Pakistan. The inappropriate medications not only add to mortality and morbidity, but also cause increased cost of treatments. Such habits must be shunned through legislation and community awareness.

PRS10

MULTIFACETED INTERVENTIONS IMPROVE MEDICATION ADHERENCE AND REDUCE ACUTE HOSPITALIZATION RATES IN MEDICAID PATIENTS PRESCRIBED ASTHMA CONTROLLERS

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OBJECTIVES: To measure the effectiveness of adherence interventions for asthma controllers on medication adherence and acute hospitalization (emergency room [ER] and inpatient) in two Medicaid managed care organizations (MCOs) in Southeastern Pennsylvania (SEPA) and Lehigh/Capital-New West Pennsylvania (LCNWPA). **METHODS:** One-year follow-up analysis of prescription and hospitalization member data with prescription fills for asthma controllers from January 1 to December 31, 2012. Thirty various interventions—categorized as general interventions (GI) for all subjects and personalized interventions (PI) for higher-risk care-managed subjects—were implemented to improve 2013 adherence. Medication adherence (proportion of days covered [PDC]; baseline inclusion criterion: 20%–67%) and acute hospitalization rates (utilization per thousand members per year) were calculated at baseline and at one-year post-intervention. **RESULTS:** Of 3,589 participants (793 LCNWPA; 2,796 SEPA), 767 were PI subjects (196 LCNWPA; 571 SEPA). SEPA and LCWPA member profiles were demographically similar to one another, except regarding race and ethnicity. The PDC rate improvements for asthma controllers were 4.86% for LCNWPA and 2.95% for SEPA (P<0.01 for both), accompanied by significant reductions in ER visits (–9.2% and –8.2%, respectively; P<0.01 for both); the SEPA cohort also experienced significantly reduced inpatient admissions (–21.7%; P=0.02). Improvements in mean PDC were significantly greater in PI than GI subjects (LCNWPA: 11.42% vs. 2.70%, P<0.01; SEPA: 7.35% vs. 1.82%, P<0.01), but acute hospitalization rates were not statistically lower in PI than GI subjects due to selection bias. Subjects demonstrating improvements in 2013 PDC rates displayed comparable changes in acute hospitalization rates as their non-improving counterparts. **CONCLUSIONS:** Multifaceted MCO-implemented adherence interventions significantly improved medication adherence rates in Medicaid participants, translating into significant reductions in acute hospitalization. These results were especially apparent in higher-risk subjects.

PRS11

COMPARISON ON PEDIATRIC ASTHMA HOSPITAL ADMISSIONS THROUGH EMERGENCY DEPARTMENT: MEDICAID VS PRIVATE INSURANCE

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OBJECTIVES: To compare the rate of inpatient admissions of pediatric patients with acute asthma that came through the emergency department (ED) visits and mean charges per ED visit between Medicaid patients and privately insured patients. To identify factors associated with hospital admissions through the ED among pediatric patients with asthma. **METHODS:** A retrospective analysis using 2010-2011 National Emergency Department Sample (NEDS), the largest all-payer hospital based ED database in the United States (US), was conducted. All ED visits with a primary diagnosis of acute asthma for patients aged 2-17 years were identified using ICD-9-CM codes of 493.XX. ED visits with unknown destination were excluded. Multivariable logistic regression and Generalized Linear Mixed Model were used to compare the rate of hospital admissions through the ED and mean ED charges between asthma children with Medicaid vs private insurance. **RESULTS:** A total of 110,964 pediatric asthma related ED visits from 1,713 US EDs was identified (Medicaid patients: n=69,410 (63%), mean age= 7yrs, 39.86% female; Private insured patients: n=41,554 (37%), mean age= 7yrs, 39.79% female). Of these occurrences, 96,307 (87%) were discharged and 14,657 (13%) were admitted to hospital after ED visits. After adjusting for demographic and clinical factors, privately insurance patients were 12% more likely to be admitted to hospital after ED visits compared to Medicaid patients. (Odds ratio= 1.12, [95% confidence interval: 1.13-1.32]). The mean charge per ED visit for Medicaid insured patients was $1,330, compared to $1,380 among private insured patients (p<0.01). Other factors associated with hospital admissions through ED were younger age, severity, weekday visits, and urban-rural location of patient's residence. **CONCLUSIONS:** Compared to asthma children with Medicaid, privately insured pediatric patients had increased hospital admissions through ED and ED charges. In addition to insurance type, factors relating to severity and hospital characteristics were related to hospital admissions through the ED.

PRS12

MORTALITY AND REHOSPITALIZATION RATES AMONG HOSPITALIZED PNEUMONIA PATIENTS IN THE U.S. MEDICARE POPULATION

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OBJECTIVES: To examine the mortality and rehospitalization rates among hospitalized U.S. Medicare patients diagnosed with pneumonia. **METHODS:** Using U.S. Medicare data, 30-day and 1-year mortality rates as well as rehospitalization rates were calculated for patients with a primary diagnosis of pneumonia (International Classification of Diseases, 9th Revision, Clinical Modification [ICD-9-CM] codes 480.0-483.99 or 485-487) or a secondary discharge diagnosis of pneumonia with a primary diagnosis of respiratory failure (ICD-9-CM code 518.81) or sepsis (038.xx). Patients with continuous enrollment in a fee-for-service Medicare health plan throughout the calendar year, and at least 2 years prior, were included in the study. Age- and gender-adjusted readmission rates were calculated by direct standardization of the U.S. population age ≥65 years in 2010 using gender-specific age groups. **RESULTS:** The 30-day and 1-year mortality rates increased by 5.9% (17 to 18 per 1,000 person-years) and 13.2% (38 to 43 per 1,000 person-years), respectively, from 2008 to 2012. The overall adjusted readmission rates were 3.82% in 2008, 3.93% in 2009, 3.98% in 2010 and 2011, and 3.17% in 2012. Men had higher readmission rates than women for all study years except 2011. Patients age 65-69 years had the highest readmission rates in 2008 (4.47%), 2009 (4.59%) and 2011 (4.77%). In 2010, patients age 70-74 years (4.41%), and in 2012, patients who were age 75-79 years (3.73%) had the highest readmission rates. Black patients had the highest readmission rates in 2008 (5.08%), North American Natives in 2009 (4.86%), other race in 2010 (5.87%), Hispanics in 2011 (5.70%) and North American Natives in 2012 (7.11%). **CONCLUSIONS:** Among U.S. Medicare beneficiaries diagnosed with pneumonia, mortality rates were higher from 2009 to 2012 than in 2008. Overall, hospital readmission rates were lower in 2012 than 2008, after adjusting for age and gender. Readmission rates varied across race and age groups.

PRS13

FACTORS AFFECTING 30-DAY HOSPITAL READMISSIONS AMONG PATIENTS WITH CHRONIC OBSTRUCTIVE PULMONARY DISEASE (COPD)

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OBJECTIVES: Hospital readmissions among patients with COPD have contributed a considerable burden to the healthcare system as measured by increased hospital stays and healthcare expenditures. The objective of this study is to estimate the factors influencing 30-day readmissions among patients with COPD. **METHODS:** A multivariable logit regression was conducted for patients with COPD [ICD 9 code(s) 491, 492 or 496] discharged to home or other facilities, utilizing the 2012 Truven MarketScan dataset (un-weighted n=21,771). The outcome variable was a dichotomous 30-day readmission, considering any type of readmission. The covariates included demographic variables, characteristics of index hospitalization and risk factors including prior hospitalization and comorbidities. **RESULTS:** The 30-day readmission rate among patients with COPD was 6.8%. Elderly patients (65+) were 77% [Odd ratio (OR)=0.23, p=0.001] less likely to be readmitted than younger cohort (aged 18-34). Male patients were 19% (OR=1.19, p=0.010) more likely to be readmitted than female patients. Patients with HMO, POS and Comprehensive insurances were 135% more (OR=2.35, p<0.001), 28% less (OR=0.72, p<0.029) and 70% less (OR=0.30, p<0.001) likely to be readmitted than those with PPO. Patients discharged to facilities, and to home under care were 162% (OR=2.62, p<0.001) and 25% (OR=1.25, p=0.028) more likely to be readmitted than those discharged to home. Patients with asphyxia and respiratory arrest, anemia, and tobacco use were more likely to be readmitted than those without by 28% (OR=1.28, p=0.016), 22% (OR=1.22, p=0.023) and 20% (OR=1.20, p=0.020), respectively. In addition, an increase of hospitalizations in the previous year contributed to a 0.75% probability increase of 30-day readmissions (p<0.001). A one-day extended index hospital